Friends of the Geography and Map Division

Spring 2015

Volume XIII, Number 2

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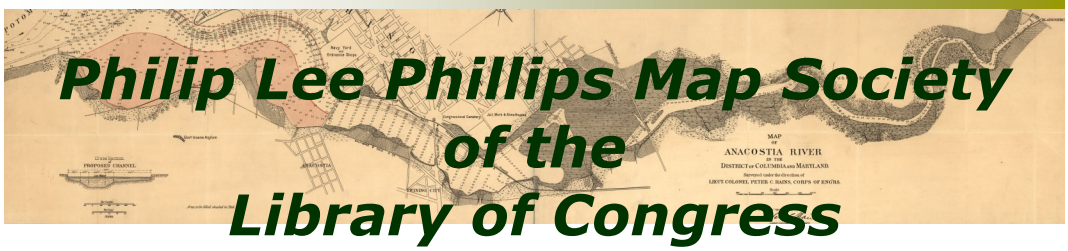

Philip Lee Phillips Map Society of the Library of Congress

Inside this issue:

MAPS

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News and information about the premier map collections of the Library of Congress.

Mapping the North and South Pole

In May, G&M held a two-day conference, "Finding the Antipodes: The Cartographic History of Polar Exploration from 1500 to the Present."

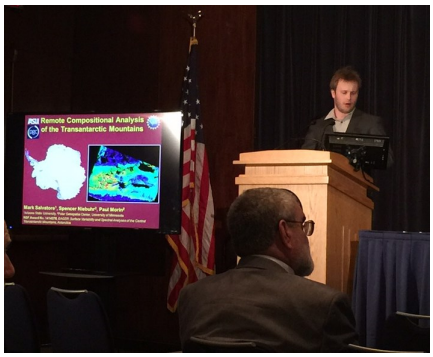
Attendees learned that the ancient Greeks deduced that the antipodes – the furthest points from the equator – were frigid lands. It would be hundreds of years before mankind moved from supposition to knowledge. Presently, changing environmental conditions occupy the concern of scientists and policymakers.

The event was sponsored and funded by the Philip Lee Phillips Map Society. John Hessler, G&M Specialist, planned the conference in conjunction with Chief Ralph E. Ehrenberg.

The Arctic

In the 1800s, America and England were in competition to reach what people then believed were the "open seas of the Arctic," which would bridge the Atlantic and Pacific oceans, said Michael Robinson of the University of Hartford. The route was commonly referred to as the Northwest Passage.

President Theodore Roosevelt Jr. inspired "rugged individuals" to risk life and limb to brave the dangers of ice and snow in the name of nation and science, the historian said. The social phenom-enon known as "Arctic fever" reached its apex when American explorer Robert Peary claimed to reach the geographic North Pole in 1909; his claim, however, remains in dispute to this day.



Cartographer Cole Kelleher discusses the state of mapping in Antarctica. Photo by Min Zhang, G&M.

The American public expressed interest in Arctic exploration by authoring books, creating visual representations, and even writing songs, such as "The Polar Bear Polka," said Arthur Dunkel-man, curator of the Jay I. Kislak Foundation. The materials are known as "Arcticana" and, while not expensive to collect, represent an important chapter in history.

Today, five nations – the United States (via Alaska), Canada, Russia, Norway, and Denmark (via Greenland) – have territorial claims, said Oran Young of the University of California Santa Barbara. Issues at stake are borders, access to resources, protecting wildlife and, most pressing, melting ice caps, the retired professor said.

Ice caps are melting with increasing speed, said Beata Csatho of the University of Buffalo and a frequent collaborator with NASA. Using state-of-the-art satellite systems, scientists have measured the retreat of glaciers, Csatho said. "This is not a global-warming talk, this is about how melting ice contributes to the rise of sea levels." She added, "The process is complicated to measure, but [Arctic] ice is getting thinner."

Antarctica

The presence of Antarctica and its geographic composition was a point of confusion in the Renaissance era, said Chet Van Duzer, an independent scholar. Key to

Story continues on page 6

G&M's Resident Poet Gets Lyrical about Maps

The Geography and Map Division

Researchers from the United States and around the world,
interested in viewing, copying, and photographing maps,
gather at the Library of Congress.

They see all types of material during their time,
organized, catalogued, and presented by staff
knowledgeable in the field of Cartography

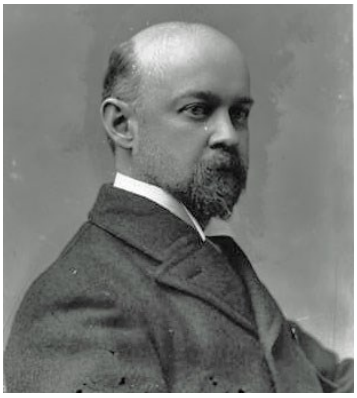
So many examine pages within atlases
while others closely look at globes,
trying to locate a specific place.

Trying to find a specific place,
so many look at globes
while others examine pages within atlases.

Those knowledgeable in the field of Cartography
see material organized, catalogued, and presented by staff.
They see all types of material during their time.

Researchers gather at The Library of Congress,
interested in viewing, copying, and photographing maps
of every place in the United States and around the world.

By John Russell Monagle



The Philip Lee Phillips Map Society of the Library of Congress is named in honor of Philip Lee Phillips (1857-1924), the first Superintendent of Maps at the Library of Congress when the Hall of Maps and Charts was established in 1897.

The group is a non-profit, voluntary association whose objective is to develop, enhance, and promote the work of the Geography and Map Division by advancing its publication, education, exhibition, preservation and acquisition programs.

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Cartography's Final Frontier

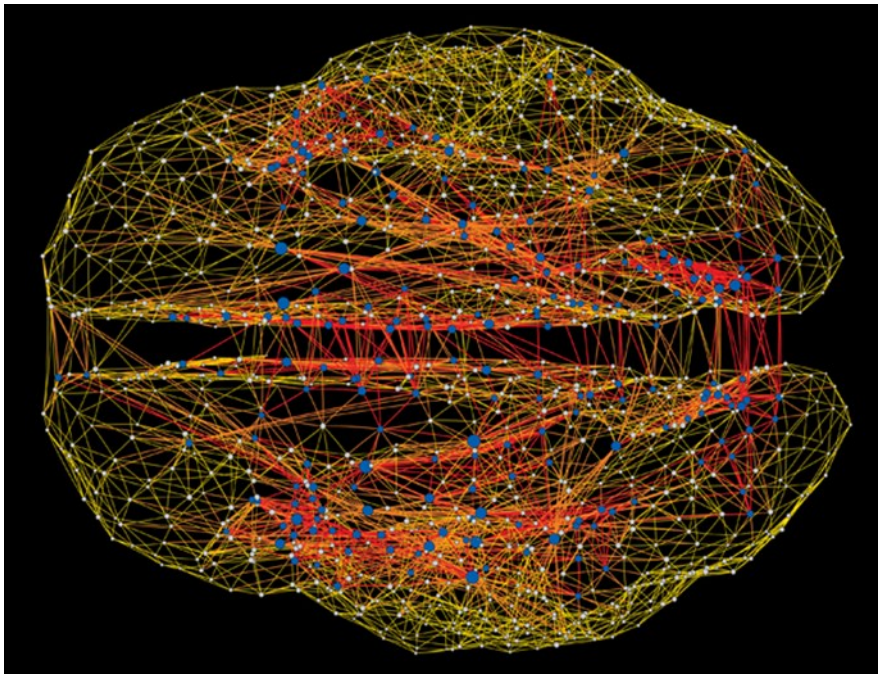
Mapping the Topology of the Human Brain

Today's cartography is very different from many of the traditional forms commonly associated with the discipline. The idea that the subject is confined to the mapping of the features and thematic variables associated with terrestrial and celestial objects started to unravel in the 1980s with the birth of computational spatial analysis. The discipline was developed in places like the Harvard Laboratory for Spatial Analysis, which this year celebrates its fiftieth anniversary.

Spatial analyses, though using many of the same underlying mathematical principles as maps, are computationally richer, and have been applied to the whole range of phenomena that take place in space and time.

Currently, the mapping of objects that have no material existence, like the Internet, social media like Twitter, or other kinds of complex networks, is common place. This practice represents a form of cartography that deals with extremely large amounts of information and data, which is a challenge for cartographers who seek a better understanding of dynamical systems that are not in equilibrium. (A dynamical system is concept in mathematics where a fixed rule describes how a point in a geometrical space depends on time.) These kinds of maps are finding their place in the analysis of important real time events like the Ebola epidemic, natural disasters, and revolutions in the Middle East and Africa.

This author is participating in a National Institutes of Health mapping program that is being conducted in laboratories and computer centers around the world. This recent program is unlike any cartographic survey heretofore attempted as it tries to map what has been termed the human connectome. Connectome is a word that did not exist a few years ago and describes the complete set of all neural connections in the human brain. The idea behind this is a simple one. The human brain is a complex network, and therefore one must understand all of its connections in order to know how it functions. This can be compared with the mapping of the Internet, which is another complex network, whose exact way of functioning remained somewhat of a mystery until it was approximately mapped and its connections understood. So instead of



routers and network hubs, here, we are mapping individual neurons.

The structure of this network is known only in its broadest form and the connectome remains a somewhat theoretical construct. We are just beginning to map its topological outlines.

The raw data for these maps comes from various forms of brain imaging, which can be thought of as a kind of remote sensing -- *The Landsat* of our inner world and of our consciousness. In the coming years, as this technology develops and new algorithms for visualizing the data are created (brain projections as compared to map projections), more of the blanks on this human map, cartography's final frontier, will eventually be filled in and will help us understand, as cartography has always done, another part of our spatial world.

By John Hessler

Richard Edes Harrison Collection Available for Research

The Letters, Papers and Maps of a Cartographic Visionary

Richard Edes Harrison helped to revolutionize how cartography was presented for popular consumption from the late 1930s through the 1970s. Scholars are seeking to better understand Harrison's (1904-1994) impact on the country's sense of its own geographic place and the influence of that sense upon the nation's politics and economy.

The papers and manuscripts of Harrison's some forty-year career are now organized and available for research in G&M. A finding aid that provides an overview of the contents accompanies the collection's catalog record. The materials are titled *Richard Edes Harrison Collection*.

Harrison's critical depiction of the Allied plan to invade Italy, "The Not-So-Soft Underside," from Look at the World: The Fortune Atlas for World Strategy.

Harrison is famous for maps he created for *Fortune Magazine*, *Time*, and the United States government. His book, "Look at the World: The Fortune Atlas for World Strategy" that was published in 1944 by *Fortune*, is his most known work.

Educated at Yale University, Harrison considered himself foremost an artist and then what he called "the accidental cartographer." He reimagined how the world could be presented by moving away from traditional views that always placed north at the top of a map and strived for accurate scaling. Instead he oriented his maps to have the maximum impact for a given theme, such as showing Italy from the viewpoint of North Africa in order to illustrate that the proposed invasion of then Mussolini's fascist controlled nation. Harrison wrote of the map: "The view was selected to undermine Churchill's insistence that Europe had to be attacked in its 'soft underbelly.' My working title for this map was 'How soft this the Belly?' The weasel-worded printed title was selection of the editors."

Although Harrison convincingly illustrated a ruggedly mountainous country with narrow coastlines that would be tough for an invading army to seize, he failed in his bid to argue for the provocative map title with his editors. Often of singular, uncompromising vision, Harrison had a number of conflicts with editors, which led him to work as a freelance artist.

Following the war, Harrison struggled to maintain his popularity, as publishers less frequently employed maps as an informational tool. His troubles were compounded by governmental scrutiny during the McCarthy era. Federal officials questioned his loyalty to the nation, citing his membership in a New York social club called the Trapdoor Spiders, which had many artists and writers, such as Russian-born science fiction writer Isaac Asimov, as members. The organization was considered left-wring leaning and possibly communist. Evidence of this period of trial can be found in his records. Harrison, however, was able to recover his reputation and produced atlases for Ginn and Nystrom, as well as authoring *The National Atlas of the United States of America* for the Department of the Interior in 1969.

Throughout his career, Harrison engaged in heavy correspondence with cartographers and map publishers. His letters speak of his insistence for compelling and engaging map illustrations in popular publications and educational materials. He was often solicited to review publications and voiced strong opinions on what he saw.

The aforementioned letters and reviews, along with the other collection materials, began to arrive at the Library in 1995. Chief Ralph E. Ehrenberg knew Harrison personally and purchased the historically significant collection, which was received in a

Story continues on page 6

Women Mapping the World

G&M and Society of Woman Geographers

The Society of Woman Geographers and G&M hosted the *Women Mapping the World* conference at the Library of Congress in March. Professional female geographers discussed their use of mapping technology for research, data, and program management, as well as their experiences pursuing careers in geography and cartography.

The conference opened with a survey of 3,000 years of mapping technology that focused on how technological advancements led to the evolution of mapping, noting the historical contribution of women spanning this timeframe. The talk was given by Kathleen Smith, former Deputy Director for Research and Engineering at the National Imagery and Mapping Agency.

The work of several former members of Society of Woman Geographers and how they persevered to become leaders in their fields was discussed by Dr. Janice Monk, a Research Professor at the School of Geography and Development at the University of Arizona. The careers of these exceptional female professionals are linked by the challenges they faced during their education, in their jobs, and by the significance of professional networks that aided their careers, said Dr. Monk.

Among those mentioned was Clara Egli LeGear (1917-1972) who gained recognition for her intellect, education, and research that led to her eventual appointment as the Assistant Chief for the Division of Maps at the Library of Congress. Early exposure to maps influenced other successful professionals such as Evelyn Lord Pruitt (1918–2000). She devoted her career to geographic research and eventually became Director of Geography at the Office of Naval Research.

A conference highlight was keynote speaker, Dr. Tanya Atwater, Professor Emeritus at the University of California, Santa Barbara. Dr. Atwater is a noted geologist whose research has led to greater understanding of the formation of the western United States. During her talk on plate tectonics, she presented computer animations of Pangea, the landmass that eventually drifted apart to form the current continents; a visualization of the San Andreas Fault; and sea-floor spreading along magnetic stripes that determine the distance continents drift in time.

A panel devoted to women in national security featured speakers Annette Krygiel, Roberta Lenczowski, and Letitia Long. Dr. Krygiel is distinguished for her achievements within the DOD for program management, including the modernization of the Defense Mapping Agency's Digital Production System. Roberta Lenczowski was involved with the Corona program, the first ever photo reconnaissance satellite system for the DOD. Letitia Long, Director of the NGA from 2010 to 2014, was the first woman to lead a major United States intelligence agency. As director, her efforts to ensure imagery could be used in the field for analysis by both military and humanitarian groups led to the establishment of the NGA's "Map of the World," an open-source data delivery system.

A panel of three women spoke on mapping applications as part of their work routines. Jacqueline Nolan, Cartographer for G&M, detailed selective uses of GIS software when developing projects for Congressional offices and the Library. Paisly Di Bianca, GIS Coordinator for Region 5 of the EPA, provided an engaging presentation on the integration of GIS into the EPA's mission to protect human health and the environment. Nicole Trenholm, Program Director for Ocean Research Project, related coordinating project objectives through science and education. Through partnerships, data and sample data sets are collected from marine environments in jeopardy, for scientific research.

Conference attendees review G&M maps during an open house in the Division's Research Center. Photo by Hannah Stahl, G&M.

The conference closed with two historical discussions.

Professor Emeritus at California State University, Long Beach, Judith Tyner, gave a presentation on women in cartography. Dr. Tyner's discussion mentioned Marie Tharp and underlined the difficulties Ms. Tharp encountered in her pursuit of an education in mapping.

A final tribute to Marie Tharp, cartographer and oceanographer, was provided by Col. Robert Rhodes, retired U.S. Army and former Foreign Service Officer, who is now processing her estate that is housed at the Library of Congress.

Col. Rhodes provided a portrait of a dynamic and determined woman scientist. In his comments, he fondly recounted several visits by Ms. Tharp to the Division.

By Jacqueline V. Nolan

David Ducey contributed to this article.

Polar Conference

Story continued from page 1

the misunderstanding was a globe created by Johannes Schoener in 1515, in which the cartographer confused the location of Brazil with that of Antarctica. Schoener believed the "southern conti-nent" was the source of the Nile River.

"Sixteenth-century cartographers had the freedom to map their hypothesis," Van Duzer said.

The desire of man to know his world went unabated, and many courageous explorers mapped the inhospitable Antarctic coast, said Robert Clancy, recipient of The Order of Australia for service to the fields of cartography and immunology. Following World War II, the United States Navy completed the best pre-digital mapping of the continent. The maps, however, represented large swaths of land and were not richly detailed.

In the 21st century, scientists have taken a cooperative approach to governance and scientific exploration of the southern continent. A crucial technology to support those ends is remote sensing, which includes high-resolution images taken by satellites, said Claire Porter and Cole Kelleher of the Polar Geospatial Center at the University of Minnesota. Porter, the lead remote-sensing scientist, and Kelleher, a cartographer, both have spent several seasons in Antarctica.

"We can see everything [in Antarctica], and we can see it often," Porter said, adding that satellite data is freely shared with federally funded researchers.

Kelleher, whose maps help scientific teams avoid dangers such as crevices, said that the detail is so great it is like seeing "your house from space." Scientists are going to places in Antarctica they never could have imagined prior to this technology, he said.

By Ryan Moore

Harrison Records

Story continued from page 4

series of shipments over a number of years.

The collection was processed over the last two years by this author with the assistance of John Monagle, Library Technician; both have a strong background in American history. Whenever possible the intellectual arrangement created by Harrison was left intact. Special attention was given to Harrison's writings and unpublished speeches, as well as the criticism of his work by third parties. These materials, along with the correspondence, inform upon the intellectual discourse and debate that surrounded his work.

The collection is voluminous, consisting of 348 map folders and 70 archival boxes. Within these are housed manuscript maps, and professional and personal papers. They also include illustration boards, tracing sheets or paper sheets, photo-reproductions, and proof prints or printed sheets. Most items represent stages of the cartographic process, from conception and design through compilation, drawing, lettering, separation for process photography, and printing.

Additional unprocessed materials related to Harrison's interest in bird-watching, Central Park, urban planning, and Yale alumni are stored with the collection.

By Ryan Moore

The Phillips Map Society Wants You!

We Looking for a Few Good Papers!

The Occasional Papers is a semi-annual publication of the Philip Lee Phillips Map Society, Friends of the Library of Congress Geography and Map Division. Articles in the journal focus on cartographic items and collections within the Library Congress. The publication is not for profit and exists for the purposes of educating readers about the history of cartography and encouraging research of the Library's cartographic collections. Copies of the journal are freely distributed to members of the Phillips Society and are freely available in the Division's Reading Room.

Articles are to be either a scholarly-type essay or a short essay contextualizing an accompanying annotated carto-bibliography. The preferred length is 8,500 to 10,000 words, which includes text, title page, endnotes, map figures, and a bibliography.

Those seeking consideration for publication should email a single-page summary of the article that includes a thesis, relationship to Library of Congress' collections, and a list suggested illustrations. Indicate if the article being submitted has been previously submitted to any other publication. If so, indicate the status of that submission. *The Occasional Papers* will not republish an article that has appeared in another publication. Writers will not be compensated but will receive three copies of the published work, as a courtesy.

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Board of Geographic Names Symposium

The U.S. Board on Geographic Names (BGN) will be observing its 125th anniversary by inviting the public to a one-day symposium on geographic names. The event, "**Traditions and Transitions**," at the Library of Congress, will be held on Friday, September 18, 2015 in the Mumford Room, from 9:00 a.m. to 5:00 p.m., followed by an open house and special exhibit from the Library of Congress.

The symposium morning session keynote speech will feature "*Geographic Names: Roles, Rhetoric, and Resistance*"; plus presentations on national naming authorities, and the origins and evolution of the BGN. The afternoon session will feature presentations on tribal names, English-language names in a multi-lingual world, and the state of volunteer geographic information. The Library of Congress Geography and Map Division will host a special exhibit and Open House following the program. Featured items will include historical documents, maps and associated materials of the Board on Geographic Names.

The BGN was established by an executive order from President Benjamin Harrison, on September 4, 1890, to standardize geographic names for federal government use. The BGN is federal body comprised of ten member agencies. The BGN organization includes the Domestic and Foreign Names Committees, and three Advisory Committees. Committee meetings are held regularly, and activities are reported annually. The BGN website hosts the online domestic geographic feature names database, www.geonames.usgs.gov, with links to the foreign geographic feature names, hosted by the NGA, http://geonames.nga.mil/gns/html/.

No registration is required to attend. For more information, please contact: Douglas.R.Caldwell@usace.army.mil.

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